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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER
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LEE, DANIEL H.

ART UNIT	PAPER NUMBER
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1791

NOTIFICATION DATE	DELIVERY MODE
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02/26/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com



### **DETAILED ACTION**

The Amendment filed December 18, 2009 has been entered. Claims 28, 29 and 34 have been cancelled by the Applicant. Therefore, claims 25-27, 30-32, and 35-48 remain for consideration by the Examiner.

#### ***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 25, 30, 32, and 35-48 rejected under 35 U.S.C. 103(a) as being unpatentable over Lenhardt (US 4911779) in view of Quelen (FR 2636380) and Demars et al. ("Demars", FR 2807783, citations taken from the US equivalent; US 7141282).
3. Regarding claims 25, 30, 32, and 35, Lenhardt discloses an apparatus for a slipless conveyance of two plates (i.e. substrates) (see abstract). The apparatus includes a mechanism for driving, guiding, and operating a nozzle (i.e. tool) (col. 16, lines 53-63). The nozzle discharges an extrusion between the glass plates along their top edge (i.e. collaborate with an edge) (col. 18, lines 13-15). Lenhardt teaches the plates can be properly spaced apart (col. 3, lines 34-37) and conveyed in any desired orientation (col. 4, lines 18-19). The apparatus of Lenhardt utilizes vacuum-applying

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conveyors (suction module), which act on the broadsides of the plates. One of ordinary skill in the art would appreciate that this apparatus (with vacuum-applying conveyors) would allow the substrates to move translationally.

4. Lenhardt teaches the tool holder device as discussed above but does not expressly teach the elements of the rotary support, vertical beam, and the linear guidance element.

5. Quelen discloses a machine for automatically laying a flexible spacing strip at the periphery of a double glazing. Quelen teaches a post (i.e. vertical beam) which has a head (i.e. rotary support) that moves vertically (i.e. linear guidance element) on the post (see abstract and Figure). At each corner the head pivots by 90 degrees (i.e. prevents the rotary support from rotating when the rotary support is moved translationally).

6. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Lenhardt to include the edge-sealing tool of Quelen as Lenhardt teaches a method of conveying plates with the four edges exposed and Quelen teaches a machine for sealing the edge of the plates.

7. Quelen teaches sealing the periphery of the double glazing.

8. However, the above references do not expressly teach the at least two press rollers being control-loop controlled independently.

9. Demars teaches at least one press roller, controlled by an articulated arm, that applies and compresses the tape against the edge of the glazing unit over its entire perimeter (col. 6, lines 33-36). Control systems are well known in the art as discussed above. Figure 5 of Demars shows press rollers moving in opposing directions. There

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are two tools (rollers) depicted in Figs. 5a, 5b, and 5c. Since the press rollers are used to apply tape, this is a sufficient teaching of surface treating. One of ordinary skill in the art would appreciate that the rollers being part of the control-loop, wherein the rollers can be controlled together or independently.

10. Demars teaches that, to save time in the girding operation, it is preferable to provide two rollers which are driven in two opposed directions and carry out the girding of two halves of the perimeter simultaneously (col. 6, lines 36-39).

11. In the light of the above disclosure it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize rollers of Demars as part of the control loop, and thereby obviate extensive grinding operations.

12. Regarding claims 36-48, Lenhardt teaches vacuum-applying conveyors that act on the broadsides of the plates (col. 3, lines 8-9). Lenhardt also teaches an embodiment in which a bottom edge-supporting conveyor (chassis) is also provided (col. 6, lines 11-13). Lenhardt teaches two vacuum-applying conveyors (suction module), which are opposite each other and spaced an adjustable distance away from each other (col. 3, lines 34-37). The plates can be transferred between vacuum-applying conveyors (modules) (col. 3, lines 40-43; operated to suck and take over).

13. As to the fixed and moving chassis limitation (frame of the apparatus), one of ordinary skill in the art would appreciate that both of the vacuum-applying conveyors of Lenhardt are capable of moving but could also be considered fixed when they are arrested at a predetermined position. As noted above, Lenhardt teaches the vacuum-applying conveyors may have virtually any orientation, not only vertical or approximately

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vertical (X) (col. 4, lines 15-20) but also horizontal (Y) and at an incline (Z). Lenhardt also teaches that the vacuum-applying conveyors (transporting means) may be correspondingly adjusted (means for positioning) in dependence on the output signals of the sensors (control loop), which detect the size of the glass plates (col. 17, lines 28-37). Substrates being substantially equivalent.

14. Lenhardt does not expressly teach assembling an insulating glazing by using an interlayer.

15. Quelen teaches a tool for automatically laying an interlayer at the periphery of a double glazing (see abstract).

16. It would have been obvious to one of ordinary skill in the art at the time of the invention to seal the glazing with the machine of Quelen to hermetically seal the glass plates to provide an insulating air space between the plates as is well known in the art.

17. Claims 26, 27 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lenhardt, Quelen and Demars as applied to claims 25, 28, 29, 32, and 36-48 above, and further in view of Okano et al. ("Okano", US 5358568).

18. Regarding claims 26 and 27, Lenhardt teaches a sensor which leads the nozzle by a predetermined distance and is responsive to the position of the glass plates (col. 17, lines 64-67). The examiner finds this to be a sufficient teaching of claims 26 and 27. Okano also discloses a spraying apparatus in which a sensor is mounted on either the nozzle or the manipulator to detect the distance between the nozzle and the surface being sprayed (see abstract). A controller responds to the signals produced by the

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sensor to maintain the nozzle at a substantially constant distance from the surface during spraying (abstract). Control systems are well known as shown above.

19. Therefore, it would have been obvious to one of ordinary skill in the art to utilize control loops or methods in the apparatus of Lenhardt as modified by Quelen in order to precisely and accurately perform process operations (e.g. positioning a substrate, positioning a tool).

20. Regarding claim 31, control systems are well known in the art as already discussed. Specifically, Okano teaches a control system where a nozzle is maintained at a substantially constant distance by responding to signals (abstract). Demars teaches the press rollers as discussed above.

21. It would have been obvious to one of ordinary skill in the art at the time of the invention to control the position of the press rollers or nozzle relative to the substrate in order to obtain a precise, consistent and uniform seal.

### ***Response to Arguments***

22. Applicant has amended claim 25 to incorporate features recited in cancelled claims 28, 29, and 34.

23. Applicant argues that the '783 application (cited as Demars by the Examiner) fails to at least disclose a second tool (comprising means for measuring, machining, shaping, or surface treating the at least one substrate) arranged fixedly and configured to operate while the at least one substrate is moving translationally. It appears, to the

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Examiner, that the Applicant at least agrees that Demars teaches a second tool (as depicted in Figs. 5a, 5b, and 5c of Demars). Applicant's point of contention seems to be directed to Demars' second tool not teaching means for measuring, machining, shaping, or surface treat the at least one substrate. However, the Examiner considers the teaching of Demars of using press rollers to apply tape a sufficient teaching of surface treating the substrate. Further, it would be obvious to one of ordinary skill in the art to substitute any other tool (such as those taught in the cited prior art) in the place of one of the tools of Demars. Therefore, this argument is not deemed persuasive.

24. Applicant argues the prior art cited to reject the dependent claims fail to remedy the deficiencies of the art cited against the independent claim. Since the above argument was not found persuasive, this argument is deemed unpersuasive as well.

### ***Conclusion***

25. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not



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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL LEE whose telephone number is (571)270-7711. The examiner can normally be reached on Monday-Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Katarzyna Wyrozebski can be reached on (571)272-1127. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/D. L./

Examiner, Art Unit 1791

/KAT WYROZEBSKI/

Supervisory Patent Examiner, Art Unit 1791